



Protocol Manager Exercises

In these exercises you will:

- 1) Create a new Protocol Manager database
- 2) Import protocols
- 3) Explore protocols
- 4) Plan method and protocol development
- 5) Create the new program
- 6) Create new protocols
- 7) Create the Doors method
- 8) Add sample attributes for the Doors method
- 9) Add method attributes for the Doors method
- 10) Create the Exit Lights method and attributes
- 11) Assign the methods to the protocol
- 12) Promote the new methods and the protocol
- 13) Assign the protocol to the project
- 14) Export the new project to FFI
- 15) Assign the protocol to an FFI sample event
- 16) Test the new protocol in FFI Data Entry

These terms might be helpful

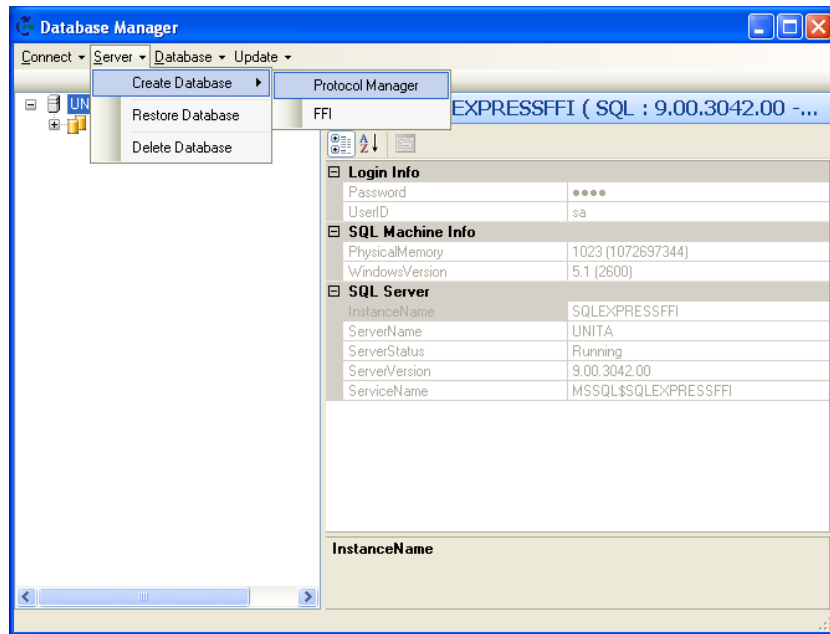
- Attribute – a quantitative field measurement or summary value, or a qualitative descriptor, that represents conditions observed in the field.
 - Sample attribute – characterizes the visit. Sample attributes are often dimensions needed for calculations or analysis, such as length, width, area, point count.
 - Method attribute – a single measurement of the specimen, such as litter depth.

Exercise 1: Create a New Protocol Manager Database

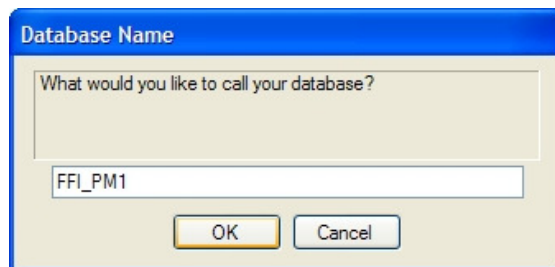
- 1.1 Launch the **FFI DB Administration** program.
- 1.2 Connect to a SQL Server database.

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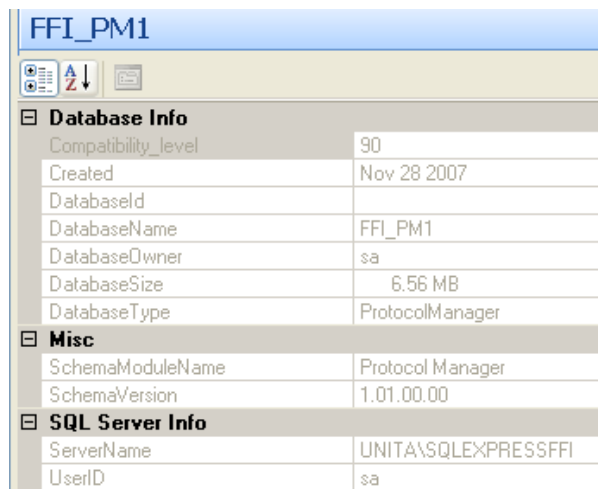
1.3 Create a new Protocol Manager database.



1.4 Name the database *FFI_PM1*. Click **OK** to create the database. This will take a few minutes.



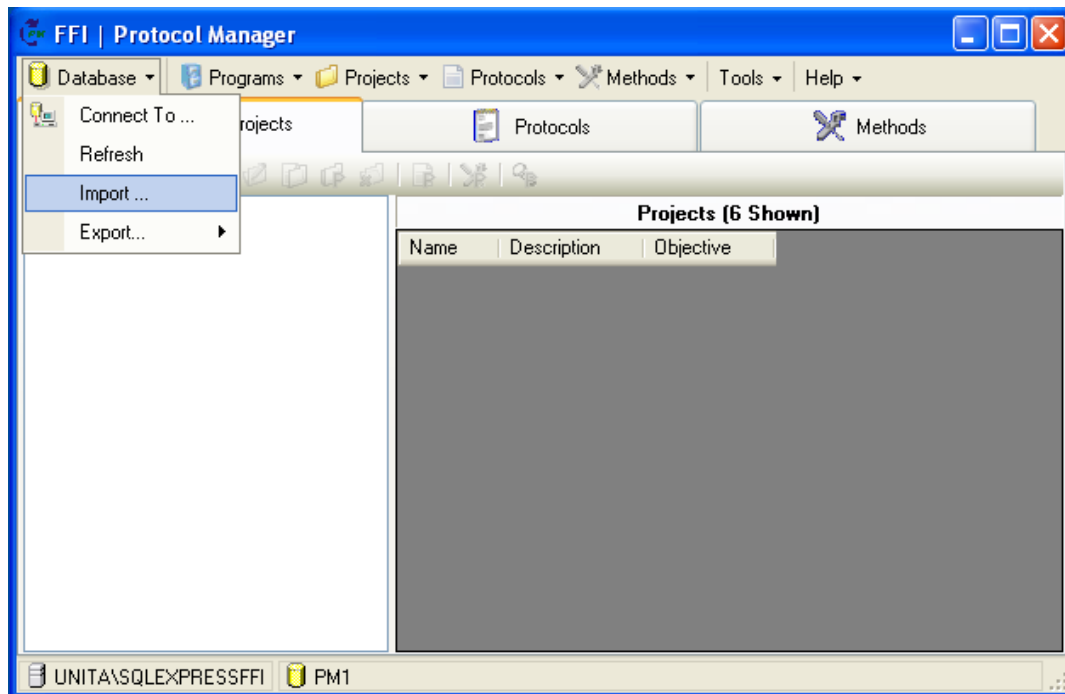
1.5 Review the database properties, shown below.



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Exercise 2: Import Protocols

- 2.1 Launch **Protocol Manager**.
- 2.2 Connect to a SQL Server database and your newly created Protocol Manager database.
- 2.3 Select **Database > Import...**



- 2.4 Navigate to a supplied Protocol Manager .pmd export file.
- 2.5 Import the .pmd file. This will take a few moments. (Might want use a smaller protocol set like the **FEAT protocols**.)

Exercise 3: Explore Protocols

- 3.1 In the **Programs and Projects** tab, expand the FFI program.
- 3.2 Explore the hierarchy down through Programs, Projects, Protocols, and Methods.

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Exercise 4: Plan Method and Protocol Development

Problem: Consider this proposed new method and protocol structure:

Program: Public Safety

Project Unit: Montana Infrastructure

Protocol: Structure Condition

Method 1: Doors

Method 2: Exit Lighting

Doors: As a government door inspector, you will visit each building. For each building, you will record the **Street Address** and the nominal **Square Footage**. Then, for each door in the building, you will record:

- Whether it is an interior or exterior door.
- Its construction type: metal, wood, or other.
- Which floor of the building it is on.
- Its width in decimal inches.
- Its height in decimal inches.
- Its condition: New, Good, Poor, or Missing.

Exit Lighting: As the government emergency exit lighting inspector, you will visit each building and record the **Street Address** and the nominal **Square Footage**. Then you will conduct a lengthy test, but the only data you are required to record are the number of emergency lights in the building and whether they passed or failed your test.

Consider these questions:

- What attributes will each method require?
- Which are sample attributes, and which are method attributes?
- What are the best data types for each attribute?
- Should any of these values be part of the macro plot instead?
- Is either of these a “single record” method?

Try to develop these protocols without referring to the solution below and then test your methods in Protocol Manager. Then promote your methods to “production” status and try them out in FFI.

Exercise 5: Create the New Program

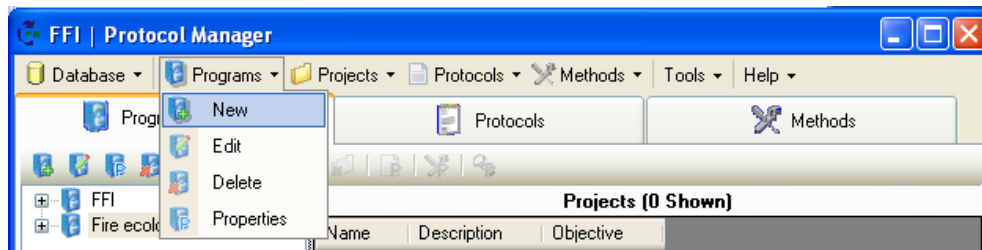
5.1 Log in to the Protocol Manager *FFI_PM1* database that you created in

Exercise 1.

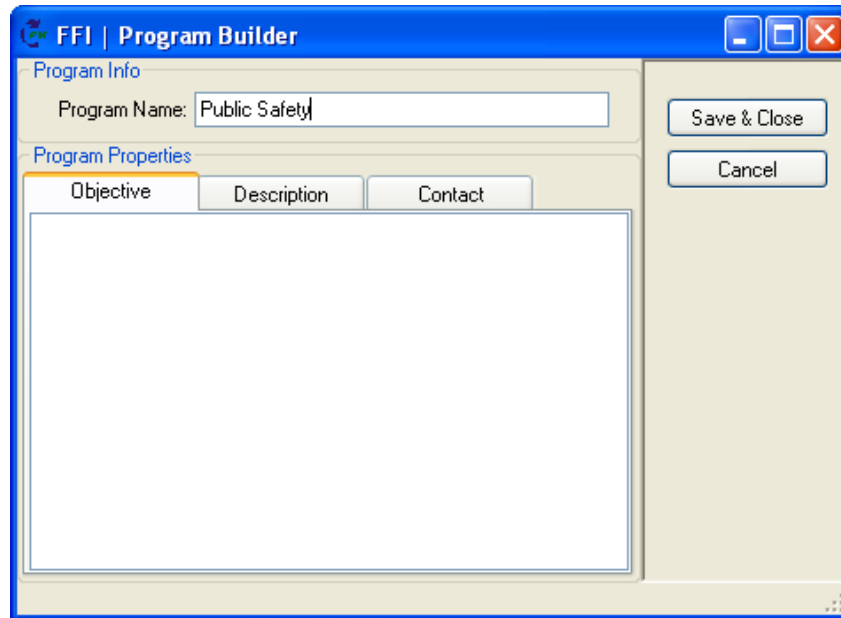
5.2 Open the **Programs** pull-down menu.

5.3 Select **New...** to create a new program.

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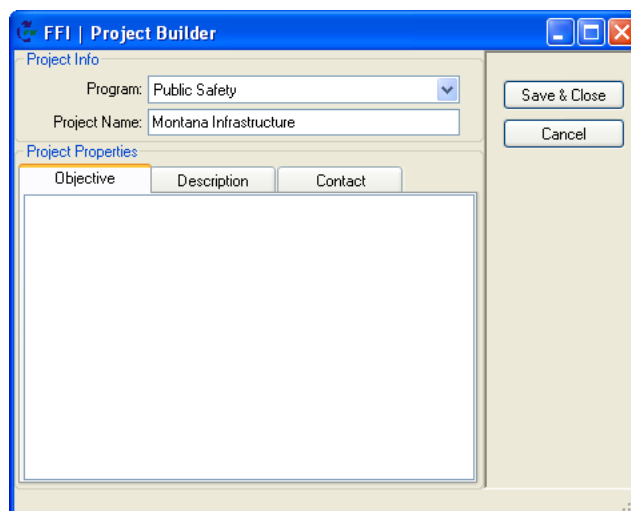


5.4 Name the new program *Public Safety*.



5.5 Highlight the new program in the tree view and select **Projects > New** to create a new project.

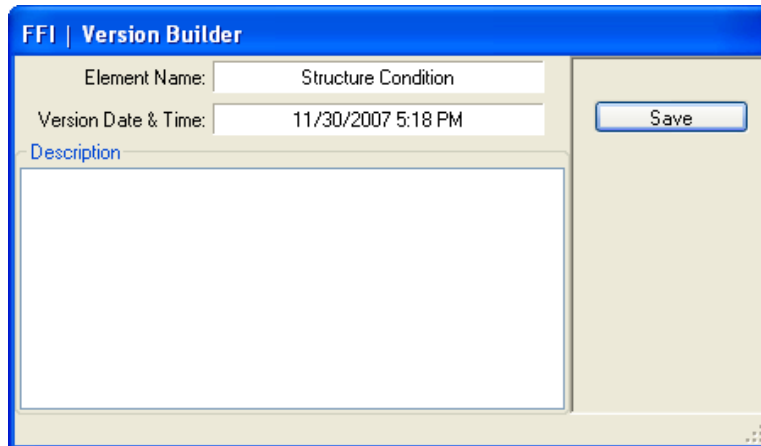
5.6 Name the new project *Montana Infrastructure* and close the window.



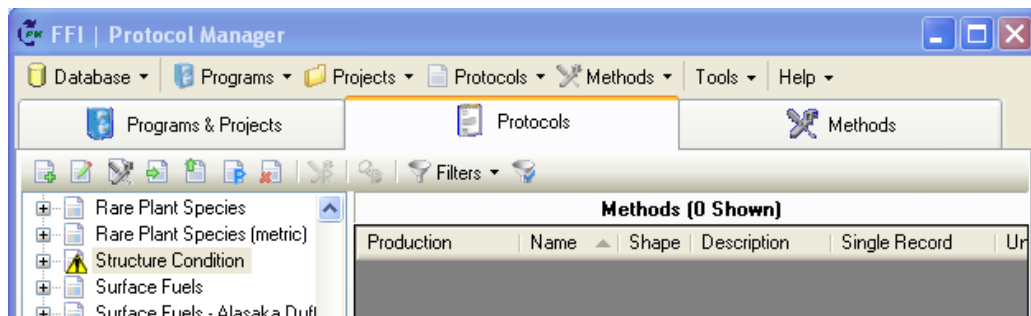
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Exercise 6: Create New Protocols

- 6.1 To create a protocol within the new project, click the **Protocols** tab. Select **Protocols > New**.
- 6.2 Name the new protocol *Structure Condition*.
- 6.4 Click **Save** in the *Version Builder* dialog.



Note that the new protocol appears in the tree view as a “development” protocol with no attached methods.

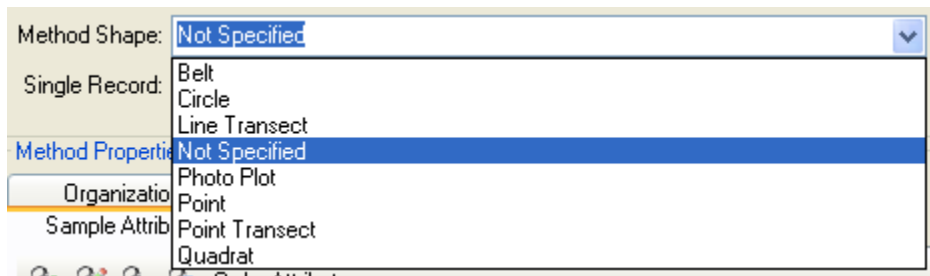


Exercise 7: Create the Doors Method

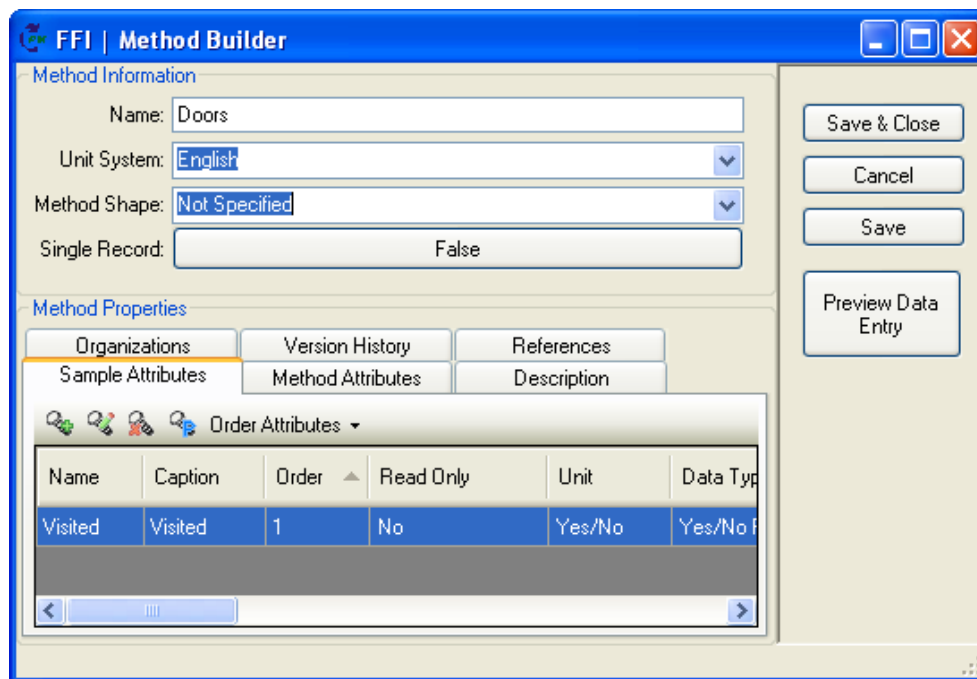
- 7.1 To create the *Doors* method, click the **Methods** tab.
- 7.2 Select **Methods > New** from the menu bar at the top of the screen.
- 7.3 In the **Method Builder** dialog, name the method *Doors*.
- 7.4 Set the **Unit System** to *English*.

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- 7.5 Review the choices for **Method Shape**. For a real sampling method, you would choose the appropriate geometry. For this example, leave it as *Not Specified*.



- 7.6 Leave **Single Record** as *False* because you will record data for multiple doors at each macro plot (building).
- 7.7 Click **Save** (not “Save & Close”. We are not done with the Method Builder.)

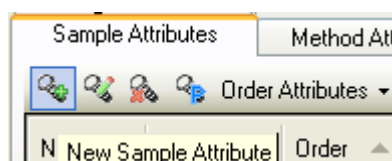


Exercise 8: Add Sample Attributes for the Doors Method

- 8.1 In the **Method Builder**, click the **Sample Attributes** tab.

*Note that the attribute **Visited** is already created. This attribute is used in analysis for calculations such as total area, and cannot be deleted or changed.*

- 8.2 Click the **New Sample Attribute** icon on the **Sample Attributes** tab.



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- 8.3 The **Sample Attribute Builder** dialog opens. Assign the name *Address* (this will be the name of the field in the database).
- 8.4 Assign the caption *Street Address*. This will be the caption that the FFI user sees during data entry and analysis.
- 8.5 Set the **Value Length** to *100*.

Sample Attribute Info	
Name:	Address
Caption:	Street Address

Sample Attribute Properties	
	Value Definition
Unit:	Not Defined
Data Type:	Text Field
Precision:	0
Read Only:	False
Limit Codes to List:	True
Default Value:	
Minimum Value:	
Maximum Value:	
Value Length:	100
Allow Null:	True
Visible:	True
Data Level:	Not Defined

- 8.6 Click **OK & Close**.
- 8.7 Create another sample attribute named *FtSqr* with the caption *Square Footage*.
- 8.8 Set the units to *Square Feet*.
- 8.9 Set the **Data Type** to *Long Integer*.
- 8.10 Set the **Minimum Value** to zero.

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The screenshot shows the 'Sample Attribute Builder' dialog box. The 'Sample Attribute Info' section has 'Name: FISqr' and 'Caption: Square Footage'. The 'Sample Attribute Properties' section has tabs for 'Value Definition', 'Codes', and 'Description'. The 'Value Definition' tab is active, showing fields for Unit (Square Feet), Data Type (Long Integer), Precision (0), Read Only (False), Limit Codes to List (True), Default Value, Minimum Value (0), Maximum Value, Value Length (0), Allow Null (True), Visible (True), and Data Level (Not Defined). Buttons for 'OK & Close' and 'Cancel' are on the right.

8.11 Click **OK & Close** on the Sample Attribute Builder.

8.12 Click **Save** on the Method Builder. (**Don't** click "Save & Close", because we are not done with the Method Builder.)

Exercise 9: Add Method Attributes for the Doors Method

9.1 Click the **Method Attributes** tab.

Note that the Index attribute has already been created. This attribute is used by the FFI data entry form to display rows in the order in which they were entered, and cannot be edited or deleted.

9.2 Click the **Add Method Attribute** icon on the **Method Attributes** tab.

9.3 Create a Boolean attribute named *Interior* with a caption of *Interior door*.

The screenshot shows the 'Method Attribute Builder' dialog box. The 'Method Attribute Info' section has 'Name: Interior' and 'Caption: Interior door'. The 'Method Attribute Properties' section has tabs for 'Value Definition', 'Codes', and 'Description'. The 'Value Definition' tab is active, showing fields for Unit (Yes/No), Data Type (Yes/No Field), Precision (0), Roll Down (False), Limit Codes to List (True), Default Value, Minimum Value, Maximum Value, Value Length (0), Allow Null (True), and Visible (True). Buttons for 'OK & Close' and 'Cancel' are on the right.

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9.4 Create a coded value field named *Construction* with the caption *Construction*.

9.5 Set **Limit Codes to List** to *True* so that the FFI user cannot enter other values.

The screenshot shows the 'FFI | Method Attribute Builder' dialog box. The 'Method Attribute Info' section has 'Name' and 'Caption' both set to 'Construction'. The 'Method Attribute Properties' section has three tabs: 'Value Definition', 'Codes', and 'Description'. The 'Value Definition' tab is active, showing various properties for the attribute. The 'Limit Codes to List' property is set to 'True'.

Property	Value
Unit:	Code
Data Type:	Text Field
Precision:	0
Roll Down:	False
Limit Codes to List:	True
Default Value:	
Minimum Value:	
Maximum Value:	
Value Length:	0
Allow Null:	True
Visible:	True
Data Level:	Not Defined

9.6 Click the **Codes** tab and enter the available values: *Metal*, *Wood*, and *Other*.

The screenshot shows the 'FFI | Method Attribute Builder' dialog box with the 'Codes' tab active. A table of codes is displayed, with columns for Code, Text, Active, and Description. The table contains three entries: Metal, Wood, and Other, all of which are active. There is also an empty row with an asterisk in the Code column.

Code	Text	Active	Description
Metal	Metal	<input checked="" type="checkbox"/>	Metal door
Wood	Wood	<input checked="" type="checkbox"/>	Wood door
Other	Other	<input checked="" type="checkbox"/>	Other material
*		<input type="checkbox"/>	

9.7 Create an integer field called *Floor* with a caption of *Floor Num*.

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- 9.8 The units are *Number* with a data type of *Long Integer*. There is no minimum number to allow for negative numbers for basements.

The screenshot shows the 'FFI | Method Attribute Builder' dialog box. The 'Method Attribute Info' section has 'Name' set to 'Floor' and 'Caption' set to 'Floor Num'. The 'Method Attribute Properties' section has three tabs: 'Value Definition', 'Codes', and 'Description'. The 'Value Definition' tab is active, showing a list of properties for the 'Floor' attribute. The properties are: Unit (Number), Data Type (Long Integer), Precision (0), Roll Down (False), Limit Codes to List (True), Default Value (1), Minimum Value (empty), Maximum Value (empty), Value Length (0), Allow Null (True), and Visible (True). The 'OK & Close' and 'Cancel' buttons are visible on the right.

Property	Value
Unit	Number
Data Type	Long Integer
Precision	0
Roll Down	False
Limit Codes to List	True
Default Value	1
Minimum Value	
Maximum Value	
Value Length	0
Allow Null	True
Visible	True

- 9.9 Add width and length attributes with unit of *Inches*, data type as *Decimal Number*, and minimum value of *Zero*.

The screenshot shows the 'FFI | Method Attribute Builder' dialog box. The 'Method Attribute Info' section has 'Name' set to 'Width' and 'Caption' set to 'Width'. The 'Method Attribute Properties' section has three tabs: 'Value Definition', 'Codes', and 'Description'. The 'Value Definition' tab is active, showing a list of properties for the 'Width' attribute. The properties are: Unit (Inches), Data Type (Decimal Number), Precision (0), Roll Down (False), Limit Codes to List (True), Default Value (empty), Minimum Value (0), Maximum Value (empty), Value Length (0), Allow Null (True), and Visible (True). The 'OK & Close' and 'Cancel' buttons are visible on the right.

Property	Value
Unit	Inches
Data Type	Decimal Number
Precision	0
Roll Down	False
Limit Codes to List	True
Default Value	
Minimum Value	0
Maximum Value	
Value Length	0
Allow Null	True
Visible	True

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The screenshot shows the 'FFI | Method Attribute Builder' dialog box. The 'Method Attribute Info' section has 'Name' and 'Caption' both set to 'Length'. The 'Method Attribute Properties' section has three tabs: 'Value Definition', 'Codes', and 'Description'. The 'Value Definition' tab is active, showing a list of properties for the 'Length' field. The properties are: Unit (Inches), Data Type (Decimal Number), Precision (0), Roll Down (False), Limit Codes to List (True), Default Value (empty), Minimum Value (0), Maximum Value (empty), Value Length (0), Allow Null (True), and Visible (True). The 'Codes' and 'Description' tabs are empty. The 'OK & Close' and 'Cancel' buttons are on the right.

Property	Value
Unit	Inches
Data Type	Decimal Number
Precision	0
Roll Down	False
Limit Codes to List	True
Default Value	
Minimum Value	0
Maximum Value	
Value Length	0
Allow Null	True
Visible	True

9.10 Create a coded value field called *Condition*.

The screenshot shows the 'FFI | Method Attribute Builder' dialog box. The 'Method Attribute Info' section has 'Name' and 'Caption' both set to 'Condition'. The 'Method Attribute Properties' section has three tabs: 'Value Definition', 'Codes', and 'Description'. The 'Value Definition' tab is active, showing a list of properties for the 'Condition' field. The properties are: Unit (Code), Data Type (Text Field), Precision (0), Roll Down (False), Limit Codes to List (True), Default Value (empty), Minimum Value (empty), Maximum Value (empty), Value Length (0), Allow Null (True), and Visible (True). The 'Codes' and 'Description' tabs are empty. The 'OK & Close' and 'Cancel' buttons are on the right.

Property	Value
Unit	Code
Data Type	Text Field
Precision	0
Roll Down	False
Limit Codes to List	True
Default Value	
Minimum Value	
Maximum Value	
Value Length	0
Allow Null	True
Visible	True

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FFI | Method Attribute Builder

Method Attribute Info

Name:

Caption:

Method Attribute Properties

Value Definition | **Codes** | Description

Order Codes ▾

	Code	Text	Active	Description
	New	New	<input checked="" type="checkbox"/>	New door
	Good	Good	<input checked="" type="checkbox"/>	Good condition
	Poor	Poor	<input checked="" type="checkbox"/>	Poor condition
▶	Missing	Missing	<input checked="" type="checkbox"/>	Door is missing
*			<input type="checkbox"/>	

OK & Close

Cancel

- 9.11** Test the new method by clicking the **Preview Data Entry** button in the **Method Builder** dialog. (You will be prompted to save).

Data Entry Preview

Delete Visit

Visited:

Street Address:

Square Footage:

	Interior Door	Door construction	Floor Num	Width	Length	Condition
✎	No ▾	Metal	1	45	84	New
	Yes ▾	Code		35.5	82	Poor
	Yes ▾	Metal		33.3	82	Missing
*	▾	Wood				
		Other				

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9.12 Save the new method (Save & Close).

The screenshot shows the 'FFI | Method Builder' dialog box. It has a blue title bar and standard window controls. The 'Method Information' section contains fields for 'Name' (Doors), 'Unit System' (English), 'Method Shape' (Not Specified), and 'Single Record' (False). The 'Method Properties' section has tabs for 'Organizations', 'Version History', 'References', 'Sample Attributes', 'Method Attributes', and 'Description'. Below these is a table with columns: Field Name, Caption, Order, Unit, and Data Type. The 'Length' row is selected. To the right are buttons for 'Save & Close', 'Cancel', 'Save', and 'Preview Data Entry'.

Method Information

Name: Doors

Unit System: English

Method Shape: Not Specified

Single Record: False

Method Properties

Organizations | **Version History** | References

Sample Attributes | Method Attributes | Description

Order Attributes ▾

Field Name	Caption	Order	Unit	Data Type
Index	Index	-2	Count/Tally	An index of rows
Interior	Interior Door	2	Yes/No	Yes/No Field
Construction	Door construction	3	Code	Text Field
Floor	Floor Num	4	Number	Long Integer
Width	Width	5	Inches	Decimal Number
Length	Length	6	Inches	Decimal Number
Condition	Condition	7	Code	Text Field

Buttons: Save & Close, Cancel, Save, Preview Data Entry

9.13 In the Version Builder dialog that pops up, click **Save**.

The screenshot shows the 'FFI | Version Builder' dialog box. It has a blue title bar and standard window controls. It contains fields for 'Element Name' (Doors) and 'Version Date & Time' (12/1/2007 12:39 PM). Below is a 'Description' section with a large text area. A 'Save' button is on the right.

FFI | Version Builder

Element Name: Doors

Version Date & Time: 12/1/2007 12:39 PM

Description

Save

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Exercise 10: Create the Exit Lights Method and Attributes

- 10.1 To create the *Exit Lights* method, click the **Methods** tab and click the **Add a New Method** button.
- 10.2 In the **Method Builder** dialog, name the method *Exit Lights*.
- 10.3 Set **Single Record** to *True* because only one observation will be recorded for each building.
- 10.4 Add the same sample attributes as shown in Exercise 7. (*Street Address* and *Square Footage*)

FFI | Method Builder

Method Information

Name:

Unit System:

Method Shape:

Single Record:

Method Properties

Organizations | Version History | References | **Sample Attributes** | Method Attributes | Description

Order Attributes ▼

Name	Caption	Order	Read Only	Unit	Description
Visited	Visited	1	No	Yes/No	Y
Address	Street Address	2	No	Not Defined	T
SqrFt	Square footage	3	No	Square Feet	L

Save & Close
Cancel
Save
Preview Data Entry

- 10.5 Add an integer method attribute for the number of lights and a Boolean attribute for Yes/No.

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The screenshot shows the 'FFI | Method Attribute Builder' dialog. The 'Method Attribute Info' section has 'Name: LightCount' and 'Caption: Light Count'. The 'Method Attribute Properties' section has three tabs: 'Value Definition' (selected), 'Codes', and 'Description'. The 'Value Definition' tab contains the following fields:

Unit:	Count/Tally
Data Type:	Long Integer
Precision:	0
Roll Down:	False
Limit Codes to List:	True
Default Value:	
Minimum Value:	0
Maximum Value:	
Value Length:	0
Allow Null:	True
Visible:	True

Buttons on the right: 'OK & Close' and 'Cancel'.

The screenshot shows the 'FFI | Method Attribute Builder' dialog. The 'Method Attribute Info' section has 'Name: Pass' and 'Caption: Pass'. The 'Method Attribute Properties' section has three tabs: 'Value Definition' (selected), 'Codes', and 'Description'. The 'Value Definition' tab contains the following fields:

Unit:	Yes/No
Data Type:	Yes/No Field
Precision:	0
Roll Down:	False
Limit Codes to List:	True
Default Value:	
Minimum Value:	
Maximum Value:	
Value Length:	0
Allow Null:	True
Visible:	True

Buttons on the right: 'OK & Close' and 'Cancel'.

Note that no **Index** field is required since **Exit Lights** is a single-record method.

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FFI | Method Builder

Method Information

Name: Exit Lights

Unit System: English

Method Shape: Not Specified

Single Record: True

Method Properties

Organizations | Version History | References | Sample Attributes | Method Attributes | Description

Order Attributes

Field Name	Caption	Order	Unit	Data Type	Default Value
LightCount	Light Count	1	Count/Tally	Long Integer	0
Pass	Pass	2	Yes/No	Yes/No Field	0

Buttons: Save & Close, Cancel, Save, Preview Data Entry

10.6 Test the method.

Data Entry Preview

Delete Visit

Visited: Yes

Street Address: 453 Maple Lane, Dry Bone MT

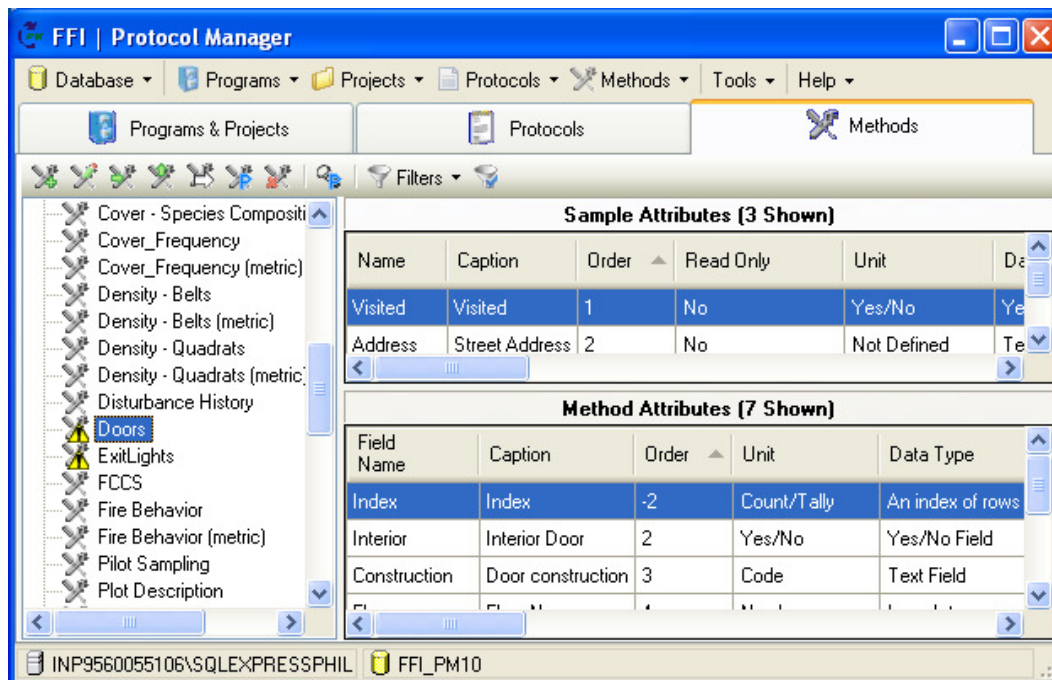
Square footage: 33000

	Light Count	Pass
	6	Yes

10.7 On the **Methods** tab, locate the new *Doors* and *ExitLights* methods. The yellow triangles indicate that the methods are in Development. This means that they can be edited, but not exported to FFI.

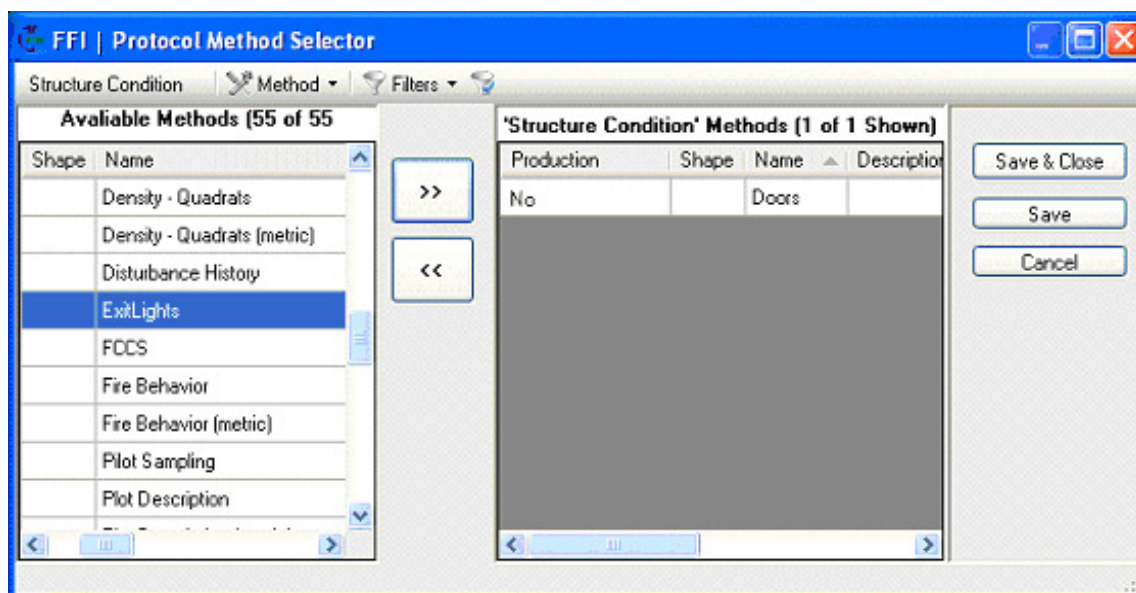
10.8 Close the Data Entry Preview dialog and **Save & Close** Method Builder
In another exercise, you will promote the methods and then promote the protocol.

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Exercise 11: Assign the Methods to the Protocol

- 11.1 Click the **Protocols** tab.
- 11.2 Highlight the *Structure Condition* protocol in the tree view.
- 11.3 Select **Protocols > Add/remove protocol methods**.
- 11.4 In the Protocol Method Selector, shift the *Doors* and *ExitLights* methods from the left-hand list to the right-hand list.

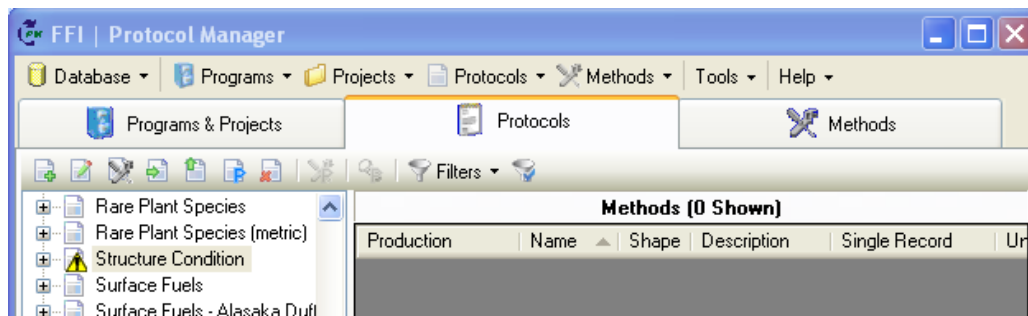


- 11.5 Click **Save & Close**.

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Exercise 12: Promote the New Methods and the Protocol

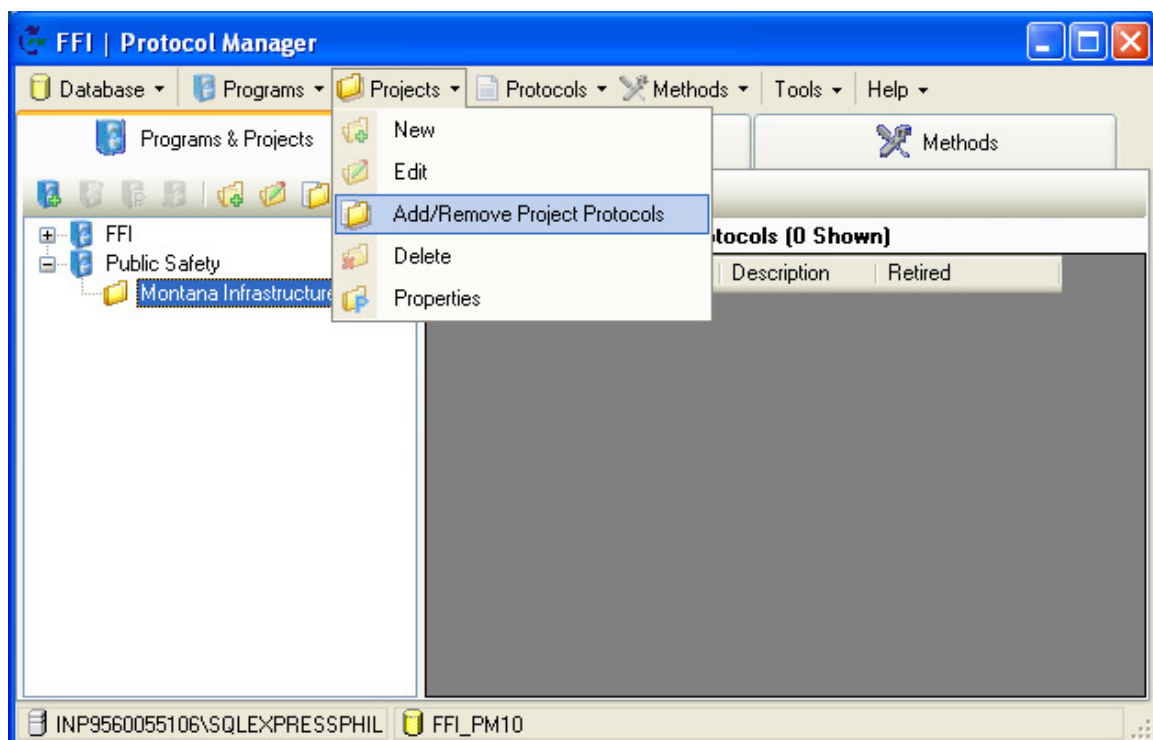
- 12.1 Click the **Methods** tab.
- 12.2 Right-click the *Doors* method and select **Promote Method**.
- 12.3 Promote the *Exit Lights* method in the same manner.
- 12.4 Click the **Protocols** tab and highlight the *Structure Condition* protocol. Note that it has a yellow triangle, indicating that it is in Development.



- 12.5 Right-click the protocol name and select **Promote Protocol**.

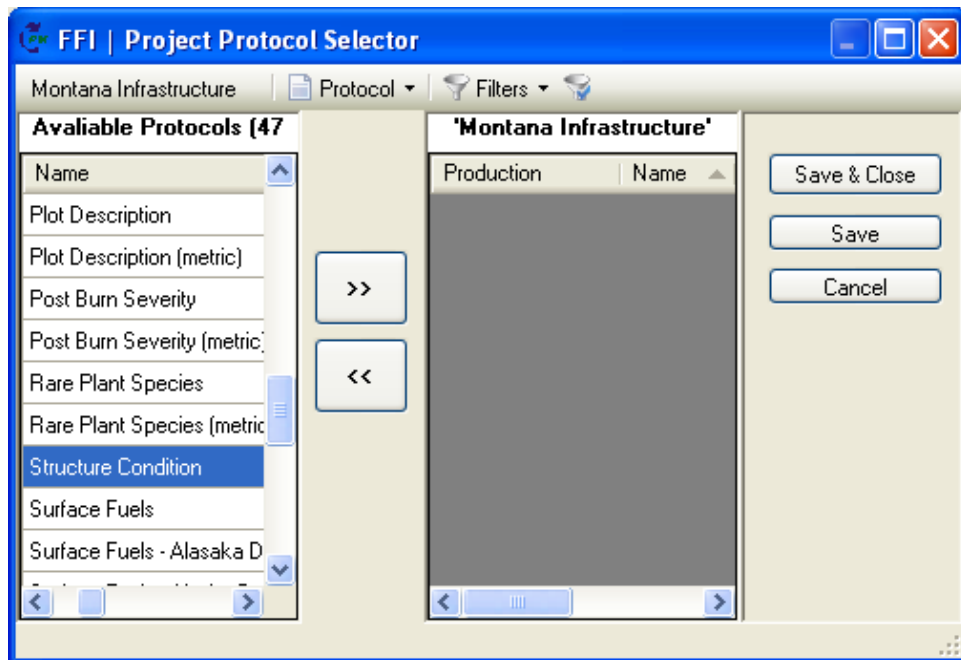
Exercise 13: Assign the Protocol to the Project

- 13.1 In the **Programs & Projects** tab, highlight the *Montana Infrastructure* project.
- 13.2 Select **Projects > Add/Remove Project Protocols**.



Protocol Manager Exercises

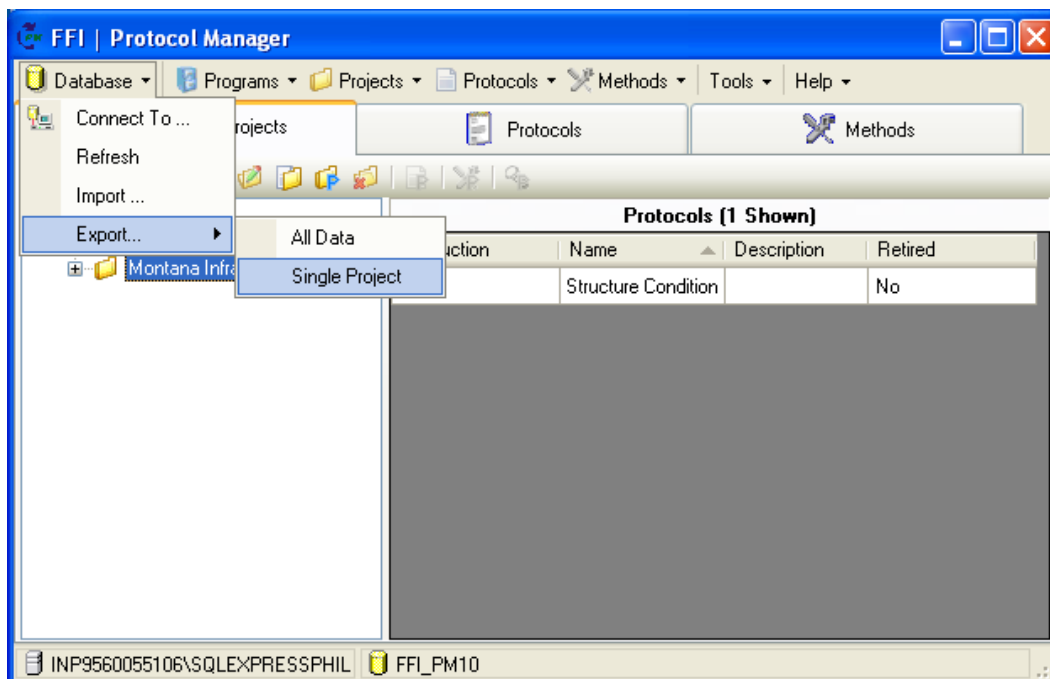
13.3 In the Project Protocol Selector dialog, highlight *Structure Condition* and shift it to the right-hand box.



13.4 Click **Save & Close**.

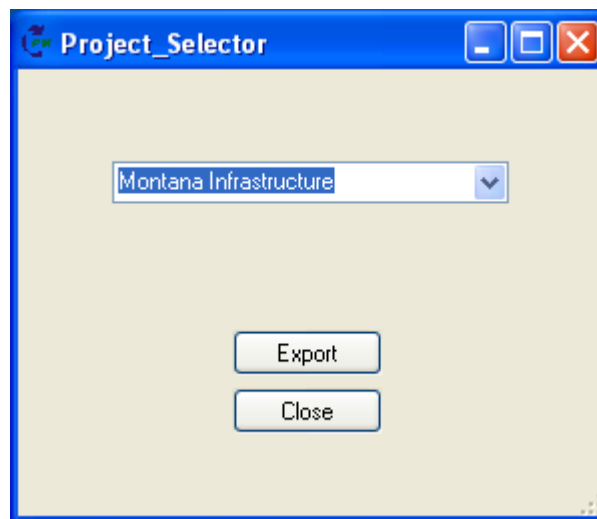
Exercise 14: Export the New Protocol to FFI

14.1 Select **Database > Export... > Single Project**.

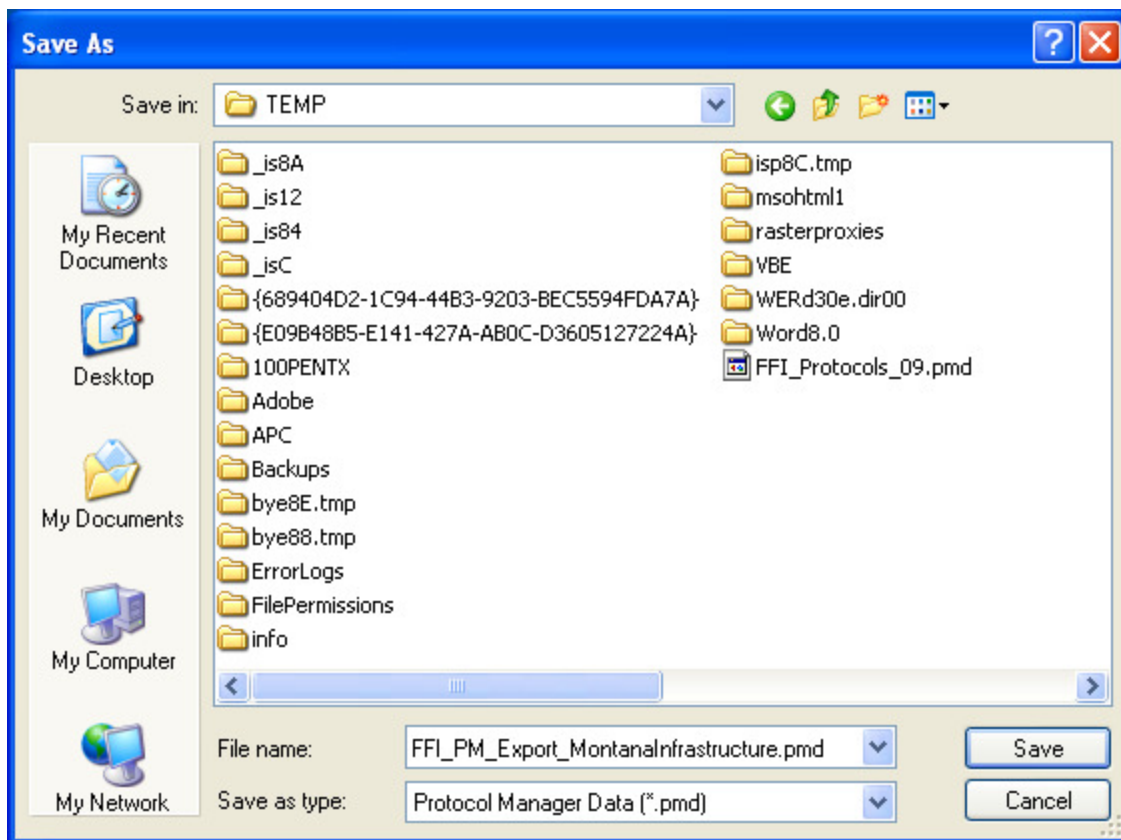


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- 14.2 In the Project Selector dialog, select the *Montana Infrastructure* and click **Export**.



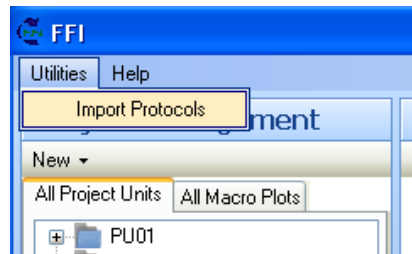
- 14.3 Save the .pmd export file in a convenient place.



- 14.4 Launch FFI and log in to an FFI database.

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14.5 In FFI, select **Utilities > Import Protocols**.



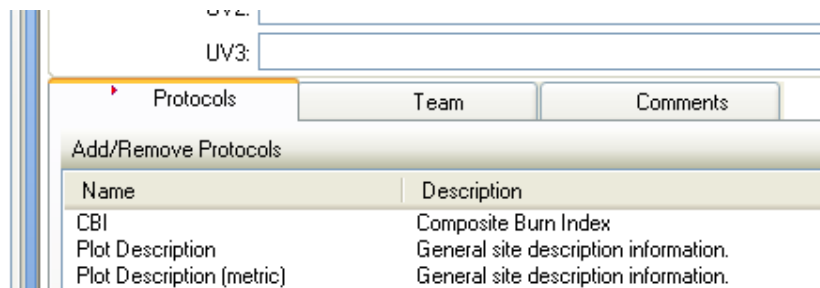
14.6 Navigate to the new .pmd file and click **Open**.

FFI will notify you when it has imported the protocol.

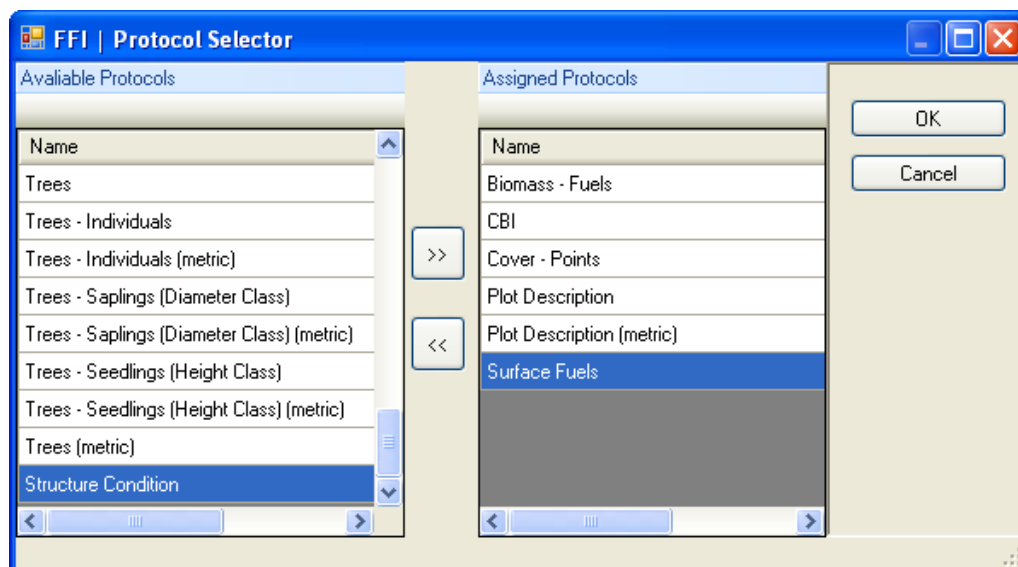
Exercise 15: Assign the Protocol to an FFI Sample Event

15.1 If necessary, create a new macro plot and sample event in FFI.

15.2 Click on **Project Management** in the lower left pane and select a sample event. Assign your new protocol to the sample event by clicking the **Add/Remove protocols** on the **Protocols** tab.

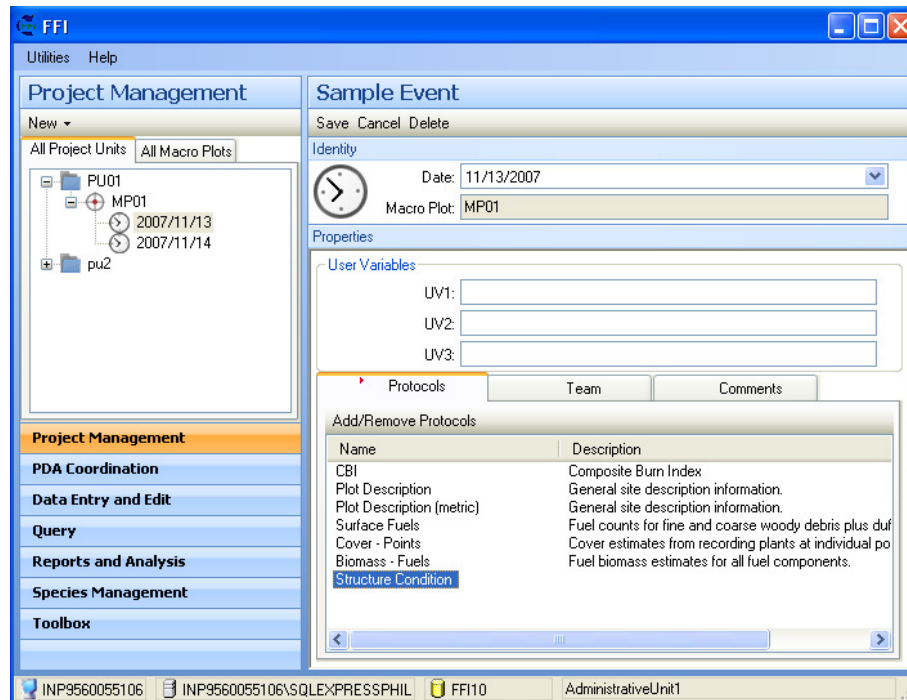


15.3 In the Protocol Selector dialog, highlight the *Structure Condition* protocol and shift it to the right.



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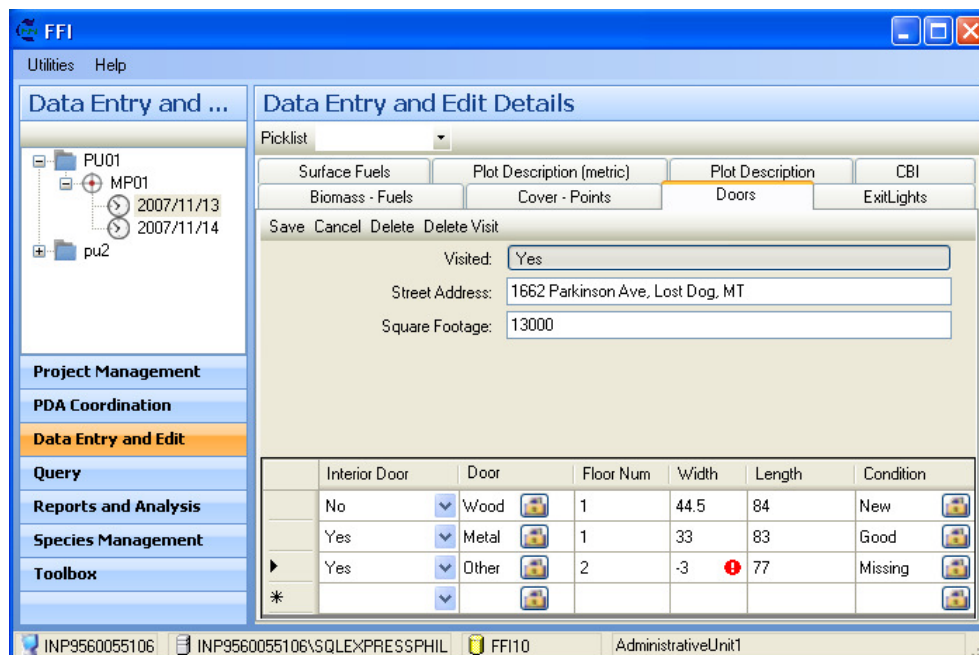
The Sample Event pane will now show your new protocol.



Exercise 16: Test the New Protocol in FFI Data Entry

16.1 In **Data Entry & Edit**, select the macro plot and sample event for the new protocol.

16.2 Try entering data for the new methods. Experiment with invalid data. In this example, an error occurred when trying to save a record that contained a negative width.



Protocol Manager Exercises

FFI

Utilities Help

Data Entry and ...

PU01
MP01
2007/11/13
2007/11/14
pu2

Project Management
PDA Coordination
Data Entry and Edit
Query
Reports and Analysis
Species Management
Toolbox

Data Entry and Edit Details

Picklist

Surface Fuels	Plot Description (metric)	Plot Description	CBI
Biomass - Fuels	Cover - Points	Doors	ExitLights

Save Cancel Delete Delete Visit

Visited: Yes

Street Address: 45 Dry Creek Lane, Shin Bone MT

Square footage: 3300

	Light Count	Pass
►	2	No
*		

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